
Release 2.1D John F. Collins, Biocomputing Research Unit.
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(TW)

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Msrch_bp protein - protein database search, using Smith-Waterman algorithm
on: Wed Aug 20 09:40:58 1997; MasPar time 10.81 Seconds
424.532 Million cell updates/sec
Tabular output not generated.

Title: >US-08-469-637A-2
Description: (1-401) from US08469637A.pap (1 of 2)
Perfect Score: 3030
Sequence: 1 MNKLCCALVFLDISIKWTT.....QKLFEMIGNOVQSVKISCL 401

Scoring table:
PAM 150
Gap 11

Searched: 96640 seqs, 11439865 residues

Post-processing: Minimum Match 0%
Listing first 45 summaries

Database: a-geneseq27
1:part1 2:part2 3:part3 4:part4 5:part5 6:part6 7:part7
8:part8 9:part9 10:part10 11:part11 12:part12 13:part13
14:part14 15:part15 16:part16 17:part17 18:part18
19:part19 20:part20

Statistics: Mean 34.492; Variance 143.083; scale 0.241

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description | Pred. No. |
|------------|-------|-------------|--------|--------|-----------------------|-----------|
| 1 | 3024 | 99.8 | 401 20 | R99925 | Full length osteoclas | 2.31e-295 |
| 2 | 3010 | 99.3 | 401 20 | R99932 | Mutated OCIF, OCIF-C2 | 6.52e-284 |
| 3 | 3010 | 99.3 | 401 20 | R99931 | Mutated OCIF, OCIF-C1 | 6.52e-284 |
| 4 | 3006 | 99.2 | 401 20 | R99933 | Mutated OCIF, OCIF-C2 | 1.69e-293 |
| 5 | 3003 | 99.1 | 399 20 | R99942 | Mutated OCIF, OCIF-C2 | 3.46e-293 |
| 6 | 3004 | 99.1 | 401 20 | R99934 | Mutated OCIF, OCIF-C2 | 2.73e-293 |
| 7 | 2996 | 98.9 | 401 20 | R99935 | Mutated OCIF, OCIF-C2 | 1.84e-292 |
| 8 | 2957 | 97.6 | 393 20 | R99948 | Mutated OCIF, OCIF-C2 | 2.03e-288 |
| 9 | 2861 | 94.4 | 380 20 | R99924 | Mature osteoclastogen | 1.79e-278 |
| 10 | 2644 | 87.3 | 351 20 | R99943 | Mutated OCIF, OCIF-C2 | 5.25e-265 |
| 11 | 2539 | 83.8 | 360 20 | R99936 | Mutated OCIF, OCIF-C2 | 3.84e-245 |
| 12 | 2394 | 79.0 | 321 20 | R99949 | Mutated OCIF, OCIF-C2 | 3.78e-230 |
| 13 | 2282 | 75.3 | 360 20 | R99938 | Mutated OCIF, OCIF-C2 | 1.42e-218 |
| 14 | 2242 | 74.0 | 359 20 | R99939 | Mutated OCIF, OCIF-C2 | 1.92e-214 |
| 15 | 2218 | 73.2 | 359 20 | R99937 | Mutated OCIF, OCIF-DC | 5.77e-212 |
| 16 | 2084 | 68.8 | 327 20 | R99941 | Mutated OCIF, OCIF-DC | 3.91e-198 |
| 17 | 2078 | 68.6 | 272 20 | R99944 | Mutated OCIF, OCIF-DC | 1.63e-197 |
| 18 | 1722 | 56.8 | 326 20 | R99940 | Mutated OCIF, OCIF-CD | 7.68e-161 |
| 19 | 1533 | 50.6 | 197 20 | R99945 | Mutated OCIF, OCIF-CD | 2.01e-141 |
| 20 | 1468 | 48.4 | 187 20 | R99950 | Mutated OCIF, OCIF-CB | 9.36e-135 |

| | | | | | | |
|----|------|------|--------|--------|-----------------------|-----------|
| 21 | 1151 | 38.0 | 143 20 | R99946 | Mutated OCIF, OCIF-CC | 2.44e-102 |
| 22 | 1093 | 36.1 | 145 20 | R99930 | Osteoclastogenesis in | 1.98e-96 |
| 23 | 1095 | 36.1 | 154 20 | R99929 | Osteoclastogenesis in | 1.24e-96 |
| 24 | 858 | 28.3 | 106 20 | R99947 | Mutated OCIF, OCIF-CC | 1.36e-72 |
| 25 | 665 | 21.9 | 84 20 | R99951 | Mutated OCIF, OCIF-CP | 3.42e-53 |
| 26 | 405 | 13.4 | 183 15 | R77421 | Bampt delat53 nerve g | 1.55e-27 |
| 27 | 405 | 13.4 | 461 2 | R11001 | 40KD TNF inhibitor pr | 1.55e-27 |
| 28 | 401 | 13.2 | 461 14 | R12504 | p75 Tumour Necrosis F | 3.79e-27 |
| 29 | 398 | 13.1 | 461 2 | R11141 | Human TNF-R deduced f | 7.40e-27 |
| 30 | 398 | 13.1 | 461 8 | R2058 | Fibroblast derived TN | 7.40e-27 |
| 31 | 398 | 13.1 | 485 2 | R24016 | Sequence of a recombi | 4.39e-26 |
| 32 | 390 | 12.9 | 518 10 | R51003 | Human protein TNFR | 4.39e-26 |
| 33 | 375 | 12.4 | 474 2 | R11142 | TNF-R deduced from MT | 1.23e-24 |
| 34 | 366 | 12.1 | 461 10 | R11002 | Sequence of human tum | 9.04e-24 |
| 35 | 323 | 10.7 | 392 2 | R11605 | Human 75KD TNF-bindin | 1.16e-19 |
| 36 | 301 | 9.9 | 277 8 | R38859 | CD40 protein. | 1.41e-17 |
| 37 | 269 | 8.9 | 326 5 | R27866 | Myxoma virus T2 prote | 1.40e-14 |
| 38 | 269 | 8.9 | 326 15 | R85072 | Myxoma virus T2 prote | 1.40e-14 |
| 39 | 260 | 8.6 | 325 15 | R85071 | Shope fibroma virus T | 9.61e-14 |
| 40 | 260 | 8.6 | 325 5 | R27865 | Rabbit fibroma virus | 9.61e-14 |
| 41 | 240 | 7.9 | 355 15 | R85073 | Cowpox virus T2-equiv | 6.71e-12 |
| 42 | 206 | 6.8 | 461 2 | R07450 | Rat Tumour Necrosis F | 8.15e-09 |
| 43 | 178 | 5.9 | 595 7 | R35478 | Lymphocyte activation | 2.45e-06 |
| 44 | 176 | 5.8 | 186 12 | R62555 | Cowpox virus Pst I/C1 | 3.67e-06 |
| 45 | 176 | 5.8 | 455 2 | R07451 | Human Tumour Necrosis | 3.67e-06 |

ALIGNMENTS

| | | |
|---------------------------|--|---------------------------------|
| RESULT | 1 | |
| ID | R99925 | standard: Protein; 401 AA. |
| AC | R99925; | |
| DT | 22-APR-1997 | (first entry) |
| DE | Full length osteoclastogenesis inhibitory factor. | |
| KW | Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; | |
| OS | Homo sapiens. | |
| FT | Key | Location/Qualifiers |
| FT | Peptide | 1..21 |
| FT | /note="Signal peptide" | |
| FT | Protein | 22..401 |
| FT | /note="Mature OCIF, claim 6" | |
| PN | W08626217-A1. | |
| PD | 29-AUG-1996. | |
| PF | 20-FEB-1996: J00374. | |
| PR | 20-FEB-1995: JP-054977. | |
| PR | 21-JUL-1995: JP-207508. | |
| PA | (SNOW) SNOW BRAND MILK PROD CO LTD. | |
| PI | Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T; | |
| PI | Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H; | |
| DR | WP1: 96-402320/40. | |
| DR | N-PSDB: T36685. | |
| PT | DNA encoding osteoclastogenesis inhibitory factor protein - useful | |
| PT | for bone resorption control, esp. treatment of osteoporosis | |
| PS | Disclosure, Page 64-66; 183pp; Japanese. | |
| CC | This sequence represents the full length osteoclastogenesis inhibitory | |
| CC | factor (OCIF) of the invention. The OCIF has a molecular weight by | |
| CC | SDS-PAGE of 60 kD under reducing conditions and 120 kD under non- | |
| CC | reducing conditions. The protein is adsorbed onto cation-exchangers | |
| CC | or heparin and its activity is lowered after 10 mins at 70 deg.C or | |
| CC | 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is | |
| CC | useful in the control of bone resorption and therefore in the | |
| CC | treatment and prevention of disorders of bone resorption, e.g. | |
| CC | osteoporosis. | |
| CC | Sequence 401 AA: | |
| SO | | |
| Query Match | 99.8%; | Score 3024; DB 20; Length 401; |
| Best Local Similarity | 99.8%; | Pred. No. 2.31e-295; |
| Matches 400; Conservative | 1; | Mismatches 0; Indels 0; Gaps 0; |
| Db | 1 MNKLCCALVFLDISIKWTTGETFPKYLYHDETSNQLCDKPEPTLYKQHTAKWTK 60 | |
| Oy | 1 MNKLCCALVFLDISIKWTTQETFPKYLYHDETSNQLCDKCPETLYKQHTAKWTK 60 | |

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Db      61  vcapcpdhyttdswhtsdeclcyaspvckeiqyvkqecnrthmrvcceckegryleiefclx 120
      61  VCAPCPDHYTDSWHTSDECLCYSPVCKELQYVKQECNRTNHRVCECKEGRYLEIEFCLX 120
Qy      121  hscpppgfgyvgaqteperntvckrcpdpdggffsnetskapcckhncsvfglllctqknat 180
      121  HSCPPPGFYVGAQTEPERNTVCKRCPDGDFFSNETSKAPCKRHNCVSFGLLLTQKGNAT 180
Qy      121  HSCPPPGFYVGAQTEPERNTVCKRCPDGDFFSNETSKAPCKRHNCVSFGLLLTQKGNAT 180
Db      181  hdnicsgnsestqkcgldvrlceaeaffrfavptkftpnwlsjvldnlpqtkvnaesveri 240
      181  HDNICSGNSESTQKCGIDVRLCEAEAFFRFAPVPTKFTPNWLSVLDNLPQTKVNAESVERI 240
Qy      181  HDNICSGNSESTQKCGIDVRLCEAEAFFRFAPVPTKFTPNWLSVLDNLPQTKVNAESVERI 240
Db      241  krhssqegqtfqllkrlwkhqkqdgdlvkkllqgdlidcensvgrhlgnahtlfeqlrsime 300
      241  KRHSSQEQTFQLLKRLWKHQKQDGLVKKLLQGDLDICENSVGRHIGNAHTLFEQLRSIME 300
Qy      241  KRHSSQEQTFQLLKRLWKHQKQDGLVKKLLQGDLDICENSVGRHIGNAHTLFEQLRSIME 300
Db      301  slpgkkyvgaedieklikackpsdqllkllslvrlkngdgtlkglmhalkhsktyhfpkt 360
      301  SLPGKKVGAEDIKTIKACKPSDQILKLLSLVRLKNGDGTLLGLMHALKHSKTYHFPKT 360
Qy      361  VTQSLKKTIRFLHSFTMYKLYOKLFLEMIGNQVSVKISCL 401
      361  VTQSLKKTIRFLHSFTMYKLYOKLFLEMIGNQVSVKISCL 401

RESULT 2
ID      R99932 standard; Protein; 401 AA.
AC      R99932;
DT      22-APR-1997 (first entry)
DE      Mutated OCIF, OCIF-C20S.
KW      Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
      osteoporosis.
OS      Synthetic.
FH      Key Location/Qualifiers
FT      Peptide 1..21
FT      /note- "Signal peptide"
FT      Protein 22..401
FT      /note- "Mature OCIF-C20S"
FT      Misc_difference 202
FT      /label- C20S
FT      W09626217-A1.
PD      29-AUG-1996.
PF      20-FEB-1996; J00374.
PR      20-FEB-1995; JP-054977.
PR      21-JUL-1995; JP-207508.
PA      (SNOW) SNOW BRAND MILK PROD CO LTD.
PI      Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
      Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
      WPI; 96-402320/40.
PI      N-PSDB; T33162.
PT      DNA encoding osteoclastogenesis inhibitory factor protein - useful
      for bone resorption control, esp. treatment of osteoporosis
PS      Claim 32, Page 96-98; 183pp. Japanese.
CC      This sequence represents a mutated version of the full length
      osteoclastogenesis inhibitory factor (OCIF) of the invention. This
      CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This
      CC mature OCIF protein is substituted by ser. The OCIF of the invention
      CC has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
      CC and 120 kD under non-reducing conditions. The protein is adsorbed onto
      CC cation-exchangers or heparin and its activity is lowered after 10 mins
      CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
      CC deg.C. OCIF is useful in the control of bone resorption and therefore
      CC in the treatment and prevention of disorders of bone resorption, e.g.
      CC osteoporosis.
SQ      Sequence 401 AA:
Query Match 99.3%; Score 3010; DB 20; Length 401;
Best Local Similarity 99.5%; Pred. No. 6,52e-294;
Matches 399; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Db      1  mnllcalavfidisikwtctgetfpkylhndeetsqllcdkcpptylkphtakwkt 60
      1  mnllcalavfidisikwtctgetfpkylhndeetsqllcdkcpptylkphtakwkt 60

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Qy      1  MNLLCALVFIIDISIKWTCTGETFPKYLHNDENSHQLCDKCPPTYLKQHTAKWKT 60
Db      61  vcapcpdhyttdswhtsdeclcyaspvckeiqyvkqecnrthmrvcceckegryleiefclx 120
      61  VCAPCPDHYTDSWHTSDECLCYSPVCKELQYVKQECNRTNHRVCECKEGRYLEIEFCLX 120
Qy      61  VCAPCPDHYTDSWHTSDECLCYSPVCKELQYVKQECNRTNHRVCECKEGRYLEIEFCLX 120
Db      121  hscpppgfgyvgaqteperntvckrcpdpdggffsnetskapcckhncsvfglllctqknat 180
      121  HSCPPPGFYVGAQTEPERNTVCKRCPDGDFFSNETSKAPCKRHNCVSFGLLLTQKGNAT 180
Qy      121  HSCPPPGFYVGAQTEPERNTVCKRCPDGDFFSNETSKAPCKRHNCVSFGLLLTQKGNAT 180
Db      181  hdnicsgnsestqkcgldvrlceaeaffrfavptkftpnwlsjvldnlpqtkvnaesveri 240
      181  HDNICSGNSESTQKCGIDVRLCEAEAFFRFAPVPTKFTPNWLSVLDNLPQTKVNAESVERI 240
Qy      181  HDNICSGNSESTQKCGIDVRLCEAEAFFRFAPVPTKFTPNWLSVLDNLPQTKVNAESVERI 240
Db      241  krhssqegqtfqllkrlwkhqkqdgdlvkkllqgdlidcensvgrhlgnahtlfeqlrsime 300
      241  KRHSSQEQTFQLLKRLWKHQKQDGLVKKLLQGDLDICENSVGRHIGNAHTLFEQLRSIME 300
Qy      241  KRHSSQEQTFQLLKRLWKHQKQDGLVKKLLQGDLDICENSVGRHIGNAHTLFEQLRSIME 300
Db      301  slpgkkyvgaedieklikackpsdqllkllslvrlkngdgtlkglmhalkhsktyhfpkt 360
      301  SLPGKKVGAEDIKTIKACKPSDQILKLLSLVRLKNGDGTLLGLMHALKHSKTYHFPKT 360
Qy      361  VTQSLKKTIRFLHSFTMYKLYOKLFLEMIGNQVSVKISCL 401
      361  VTQSLKKTIRFLHSFTMYKLYOKLFLEMIGNQVSVKISCL 401

RESULT 3
ID      R99931 standard; Protein; 401 AA.
AC      R99931;
DT      22-APR-1997 (first entry)
DE      Mutated OCIF, OCIF-C19S.
KW      Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
      osteoporosis.
OS      Synthetic.
FH      Key Location/Qualifiers
FT      Peptide 1..21
FT      /note- "Signal peptide"
FT      Protein 22..401
FT      /note- "Mature OCIF-C19S"
FT      Misc_difference 195
FT      /label- C19S
FT      W09626217-A1.
PD      29-AUG-1996.
PF      20-FEB-1996; J00374.
PR      20-FEB-1995; JP-054977.
PR      21-JUL-1995; JP-207508.
PA      (SNOW) SNOW BRAND MILK PROD CO LTD.
PI      Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
      Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
      WPI; 96-402320/40.
PI      N-PSDB; T33161.
PT      DNA encoding osteoclastogenesis inhibitory factor protein - useful
      for bone resorption control, esp. treatment of osteoporosis
PS      Claim 29, Page 94-96; 183pp. Japanese.
CC      This sequence represents a mutated version of the full length
      osteoclastogenesis inhibitory factor (OCIF) of the invention. This
      CC sequence represents OCIF-C19S in which the 19th Cys residue in the
      CC mature OCIF protein is substituted by ser. The OCIF of the invention
      CC has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
      CC and 120 kD under non-reducing conditions. The protein is adsorbed onto
      CC cation-exchangers or heparin and its activity is lowered after 10 mins
      CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
      CC deg.C. OCIF is useful in the control of bone resorption and therefore
      CC in the treatment and prevention of disorders of bone resorption, e.g.
      CC osteoporosis.
SQ      Sequence 401 AA:
Query Match 99.3%; Score 3010; DB 20; Length 401;
Best Local Similarity 99.5%; Pred. No. 6,52e-294;
Matches 399; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Db      1  mnllcalavfidisikwtctgetfpkylhndeetsqllcdkcpptylkphtakwkt 60
      1  mnllcalavfidisikwtctgetfpkylhndeetsqllcdkcpptylkphtakwkt 60

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OY 1 MNKLCCALVFLDISIKWTQETFPFKYIHDEETSHQLDCKCPGTYLKQHCIAKAKMT 60
Db 61 vcapcpdhyytcdswhtdecllycspvckelgyvkqecnrthnrveckeegryleiefcl 120
OY 61 VCAPCPDHYTDSWHTSDECLYCSPVCKELGYVKQECNRTHNRVCECKEGRYLEIEFCLK 120
Db 121 hrscppgfyvvaqagpervntvckrcpddgfisnetskpcrcrhtncsvfgllltqkgnat 180
OY 121 HRSCPFGVYVQAGPERNTVCKRCPDGFFSNETSskaPCRKHTNCsvfgllltqkgnat 180
Db 181 hdnicsgnsesetqcgldvtlceeaaffrfavpckftpmwlsyvdnlpgrtkvnaesveri 240
OY 181 HDNICSNGSESTQCGIDVTLCEEAFFRFAVPTKFTPMWLSVLDNLPGRTKVNAESVERI 240
Db 241 krqhsagqetfgllkklwkhqkddqivkklldqldlsensvgrhghanltfegqlrsime 300
OY 241 KROHSSQETFGLLKLMKHKQKDDIVKKIIDDLCENSVRHGHANLTFEQLRSIME 300
Db 301 slpgkkygaedieklikackpsdqllkllslwrkngddtckgilmahkshktyhfpkt 360
OY 301 SLPGKKVGAEDIEKTIKACKPSDQILKLLSLWRKNGDDTLKGLMAHLKSHKTYHFPKT 360
Db 361 vtqslkktirflhstfmyklyqkflflemingvsgvskisl 401
OY 361 VTOSLKKTIREFLHSTFYMKLYQKLFLEMIGNOVOSVKISCL 401

RESULT 4
ID R99933 standard; Protein: 401 AA.
AC R99933: 22-APR-1997 (first entry)
DE Mutated OCIF, OCIF-C21S.
KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
OS Osteoporosis.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Signal peptide"
FT Protein 22..401
FT /note= "Mature OCIF-C21S"
FT Misc.difference 277
FN /label= C21S
FN W09626217-A1.
PD 29-AUG-1996.
PF 20-FEB-1996: J00374.
PR 20-FEB-1995: JP-054977.
PR 21-JUL-1995: JP-207508.
PI (SNOW) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
DR MPI: 96-402320/40.
DR N-PSDB: T33163.
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
PT for bone resorption control, esp. treatment of osteoporosis
PS Claim 35: Page 98-100; 183pp; Japanese.
CC This sequence represents a mutated version of the full length
CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This
CC sequence represents OCIF-C21S in which the 21st Cys residue in the
CC mature OCIF protein is substituted by Ser. The OCIF of the invention
CC has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
CC and 120 kD under non-reducing conditions. The protein is adsorbed onto
CC cation-exchangers or heparin and its activity is lowered after 10 mins
CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
CC deg.C. OCIF is useful in the control of bone resorption and therefore
CC in the treatment and prevention of disorders of bone resorption, e.g.
CC osteoporosis.
SQ Sequence 401 AA:

```

Query Match 99.2%; Score 3006; DB 20; Length 401;
 Best Local Similarity 99.0%; Pred. No. 1,69e-293;
 Matches 397; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

```

Db 1 mnallccalvflidisikwtqetfppkylhydeetsnqlcdkcpptylykqhtcakwt 60
OY 1 MNKLCCALVFLDISIKWTQETFPFKYIHDEETSHQLDCKCPGTYLKQHCIAKAKMT 60
Db 61 vcapcpdhyytcdswhtdecllycspvckelgyvkqecnrthnrveckeegryleiefcl 120
OY 61 VCAPCPDHYTDSWHTSDECLYCSPVCKELGYVKQECNRTHNRVCECKEGRYLEIEFCLK 120
Db 121 hrscppgfyvvaqagpervntvckrcpddgfisnetskpcrcrhtncsvfgllltqkgnat 180
OY 121 HRSCPFGVYVQAGPERNTVCKRCPDGFFSNETSskaPCRKHTNCsvfgllltqkgnat 180
Db 181 hdnicsgnsesetqcgldvtlceeaaffrfavpckftpmwlsyvdnlpgrtkvnaesveri 240
OY 181 HDNICSNGSESTQCGIDVTLCEEAFFRFAVPTKFTPMWLSVLDNLPGRTKVNAESVERI 240
Db 241 krqhsagqetfgllkklwkhqkddqivkklldqldlsensvgrhghanltfegqlrsime 300
OY 241 KROHSSQETFGLLKLMKHKQKDDIVKKIIDDLCENSVRHGHANLTFEQLRSIME 300
Db 301 slpgkkygaedieklikackpsdqllkllslwrkngddtckgilmahkshktyhfpkt 360
OY 301 SLPGKKVGAEDIEKTIKACKPSDQILKLLSLWRKNGDDTLKGLMAHLKSHKTYHFPKT 360
Db 361 vtqslkktirflhstfmyklyqkflflemingvsgvskisl 401
OY 361 VTOSLKKTIREFLHSTFYMKLYQKLFLEMIGNOVOSVKISCL 401

RESULT 5
ID R99942 standard; Protein: 399 AA.
AC R99942: 23-APR-1997 (first entry)
DE Mutated OCIF, OCIF-CL.
KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
OS Osteoporosis.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Signal peptide"
FT Protein 22..399
FT /note= "Mature OCIF-CL"
FN W09626217-A1.
PD 29-AUG-1996.
PF 20-FEB-1996: J00374.
PR 20-FEB-1995: JP-054977.
PR 21-JUL-1995: JP-207508.
PI (SNOW) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
DR MPI: 96-402320/40.
DR N-PSDB: T33172.
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
PT for bone resorption control, esp. treatment of osteoporosis
PS Claim 62: Page 117-119; 183pp; Japanese.
CC This sequence represents a mutated version of the full length
CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This
CC sequence represents OCIF-CL in which amino acids 379-380 of the
CC mature OCIF protein are deleted. The OCIF of the invention
CC has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
CC and 120 kD under non-reducing conditions. The protein is adsorbed onto
CC cation-exchangers or heparin and its activity is lowered after 10 mins
CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
CC deg.C. OCIF is useful in the control of bone resorption and therefore
CC in the treatment and prevention of disorders of bone resorption, e.g.
CC osteoporosis.
SQ Sequence 399 AA:

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Query Match 99.1%; Score 3003; DB 20; Length 399;
 Best Local Similarity 99.7%; Pred. No. 3,46e-293;
 Matches 398; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
 Db 1 mnallccalvflidisikwtqetfppkylhydeetsnqlcdkcpptylykqhtcakwt 60

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Qy      1 mKLLCCALVFLDISIKTTTOETFPFKLHNDDEETSHOJLJCDKCPPEITYLKQCHTAKWT 60
Db      61 vcaepcdhytidswhtsdecljyccspvckelgyvqgenrthnrvceekeryleiefcl 120
Qy      61 vCAePcDhYtIdSwHtSDeClJyCcSpVcKeLgYvQgEnRtHnRvCeEKeRyLeIeFclK 120
Db      121 htsccpgfagvvaagtpearnrvckrcpbdgfisnetskxpcrkhtncsvfgllltqkgnat 180
Qy      121 HtSCcPgfAgVvAaGtPeArNrvCkRcPbdGfIsNeTsKxPcRkHtNcSvFgLLlTqKgNaT 180
Db      181 hdnicsgnsesctqkcgldvclceeeffirfawpctkfcpmwlsavlvdnlpgtkvnaesvert 240
Qy      181 hDnIcSGNsESctQKcGldVclCeeEfffIrFaWpCtKfCpMwLsVlVdNlPgTKvNAeSvErI 240
Db      241 krphssgqgctfgllklwvhnqkxdqdvkklitqddidleensvqrtrhgaanltfeqlslme 300
Qy      241 KRoHSSoGqGctFgllKlWvHnQkXdQdVvKklItQdDIdLeNsVqRtrHgAaNLtFeQlSlMe 300
Db      301 slpvgkvaadedlektikackpsddllklslwrknqdgdtlqglmahkshktylfprk 360
Qy      301 SlPgKvAaEdElEkTiKAcKpSdDlKlSlWrKnQdGdtLqGlMaHkShKtYlFpRk 360
Db      361 vtgsakktirfshfstmklygkklflemingqvsvxks 399
Qy      361 vTGSaKkTIRfShfStmKlYgKklFleMIngQvSVxKs 399

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| | |
|--------|-----------------------------------|
| RESULT | 6 |
| ID | R99934 standard; Protein; 401 AA. |

| | | |
|----|--|---------------------|
| DE | 12-APR-1997 | (first entry) |
| DT | Mutated OCIF, OCIF-C22S | |
| KM | Osteoclastogenesis Inhibitory factor; OCIF; heparin; bone resorption; | |
| KS | Osteopontin. | |
| FM | Key | Location/Qualifiers |
| FT | Peptide | 1..21 |
| FT | /note="Signal peptide" | |
| FT | Protein | 22..401 |
| FT | /note="Mature OCIF-C22S" | |
| FT | Misc.difference | 277 |
| FT | /label=C22S | |
| PN | W095626217-Al. | |
| PD | 29-AUG-1996. | |
| PT | 20-FEB-1996; J00374. | |
| PT | 20-FEB-1995; JP-054977. | |
| PR | 21-JUL-1995; JP-207508. | |
| PR | (SNOW) SNOW BRAND MILK PROD CO LTD. | |
| V* | Goto M, Hiasato K, Kobayashi F, Mochizuki S, Morinaga T; | |
| DR | Nanagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H; | |
| DR | WPI: 96-402320/40. | |
| DR | N-PSDB: T33164. | |
| PT | DNA encoding osteoclastogenesis inhibitory factor protein - useful | |
| PT | for bone resorption control, esp. treatment of osteoporosis | |
| PS | Claim 38: Page 100-102; 183pp; Japanese. | |
| SC | This sequence represents a mutated version of the full length | |
| SC | osteoclastogenesis inhibitory factor (OCIF) of the invention. This | |
| SC | sequence represents OCIF-C22S in which the 22nd Cys residue in the | |
| SC | mature OCIF protein is substituted by Ser. The OCIF of the invention | |
| SC | has a molecular weight by SDS-PAGE of 60 kD under reducing conditions | |
| SC | and 120 kD under non-reducing conditions. The protein is adsorbed onto | |
| SC | cation-exchangers or heparin and its activity is lowered after 10 mins | |
| SC | at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90 | |
| SC | deg.C. OCIF is useful in the control of bone resorption and therefore | |
| SC | in the treatment and prevention of disorders of bone resorption, e.g. | |
| SC | osteoporosis. | |
| SC | Sequence 401 AA; | |

| | | | | |
|-----------------------|--------------|----------------------|---------------|-------------|
| Query Match | 99.1%; | Score 3004; | DB 20; | Length 401; |
| Best Local Similarity | 99.3%; | Pred. No. 2.73e-293; | | |
| Matches 398; | Conservative | 2; | Mismatches 1; | Indels 0; |
| | | | Gaps 0; | |

| | | | |
|----|-----|---|-----|
| Db | 1 | mmllccalvlfldisikwtqgetfpryuhlyhdeetsqllcdkscprgtykqpcstakwyt | 60 |
| Qy | 1 | mnklccalvfludisikwtqgetfpryuhlyhdeetsqllcdkscprgtykqpcstakwyt | 60 |
| Db | 61 | vccapcdphyytcdswhtsdeclcyaspvckejyqkgcentrhakvceckegryleiefcl | 120 |
| Qy | 61 | vcacacprhyttdsmhtsdeclcyaspvckejyqkgcentrhakvceckegryleiefcl | 120 |
| Db | 121 | hrcsppgfygvvgaqterpntvckircpddffsnetsakpcrkhtnsvfjlltqkgnat | 180 |
| Qy | 121 | hrscppgfygvvgaqterpntvckircpddffsnetsakpcrkhtnsvfjlltqkgnat | 180 |
| Db | 181 | hdnlcsnseestcgqcdvllceaeaffrfvyrkkiprnysvlvdrprgkxhaesverl | 240 |
| Qy | 181 | hdnlcsnseestcgqcdvllceaeaffrfvyrkkiprnysvlvdrprgkxhaesverl | 240 |
| Db | 241 | krcghsagqetfqllklykhhakddvlykklqgdldicensvqghlghaaltfeqrlsme | 300 |
| Qy | 241 | krcghsagqetfqllklykhhakddvlykklqgdldicensvqghlghaaltfeqrlsme | 300 |
| Db | 301 | slpgrkxvgaediektlaskpsqdlnlslwtikngdgtlygmahlxsktyhfrkt | 360 |
| Qy | 301 | slpgrkxvgaediektlaskpsqdlnlslwtikngdgtlygmahlxsktyhfrkt | 360 |
| Db | 361 | vtgslkktirflhsftmyklyoklflieamngvqsvylseol | 401 |
| Qy | 361 | vtoslmkktirflhsftmyklyoklflieamngvqsvylseol | 401 |

| | |
|--------|-----------------------------------|
| RESULT | 7 |
| ID | R99935 standard; Protein; 401 AA. |

| | | |
|----|---|---------------|
| DT | 22-APR-1997 | (first entry) |
| DE | Mutated OCIF, OCIF-C235 | |
| KW | Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; osteoporosis. | |
| OS | Synthetic. | |
| FH | Key | |
| FT | peptide | |
| FT | /note="Signal peptide" | |
| FT | protein | |
| FT | /note="Mature OCIF-C235" | |
| FT | Misc-difference 400 | |
| FT | /label-C235 | |
| PD | W09626217-A1. | |
| PD | 28-AUG-1996. | |
| PE | 20-FEB-1996; J00374. | |
| PR | 20-FEB-1995; JP-054977. | |
| PR | 21-FEB-1995; JP-207508. | |
| PA | (SNOW) SNOW BRAND MILK PROD CO LTD. | |
| PI | GOTO M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T; | |
| PI | Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H; | |
| DR | WPI: 96-402320/40. | |
| DR | N-PDB: T33165. | |
| PT | DNA encoding osteoclastogenesis inhibitory factor protein - useful | |
| PT | for bone resorption control, esp. treatment of osteoporosis | |
| PS | Claim 41: Page 103-105; 183pp; Japanese. | |
| CC | This sequence represents a mutated version of the full length | |
| CC | osteoclastogenesis inhibitory factor (OCIF) of the invention. This | |
| CC | sequence represents OCIF-C235 in which the 23rd Cys residue in the | |
| CC | mature OCIF protein is substituted by Ser. The OCIF of the invention | |
| CC | has a molecular weight by SDS-PAGE of 60 kD under reducing conditions | |
| CC | and 120 kD under non-reducing conditions. The protein is adsorbed onto | |
| CC | cation-exchangers or heparin and its activity is lowered after 10 mins | |
| CC | at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90 | |
| CC | deg.C. OCIF is useful in the control of bone resorption and therefore | |
| CC | in the treatment and prevention of disorders of bone resorption, e.g. | |
| CC | osteoporosis. | |
| CC | Sequence 401 AA: | |

| | | | | |
|---------------------------|-------|----------------------|-----------|-------------|
| Query Match | 98.9% | Score 2396; | DB 20; | Length 401; |
| Best Local Similarity | 99.3% | Pred. No. 1.84e-292; | | |
| Matches 398; Conservative | 1; | Mismatches 2; | Indels 0; | Gaps 0; |

Db 1 mnlldcalvldisikwtgetfppkylhydeetsbqllcdkcpptylkhqctakwt 60
 |||
 QY 1 MNKLDCALVFLDISIKWTGETFPPKYLHYDEETSHQLCDKCPGTYLKHQCTAKWT 60
 61 vcacpbdhytwsdshsdeslscspvckelqyvkgecnthrvceckegrylelefcik 120
 |||
 QY 61 VCAACPDHYTDSMHTSDECLYCSPVCKELQYVKGECNTRHNVCECKEGRYLEIFCCLK 120
 121 hrscppgfyvgaqtperntvckrcpdpffsnetsskacprkhncsvfgllltqkgnat 180
 |||
 QY 121 HRSCPFGVGAQTPERNTVCKRCPDGFFSNETS SKAPCKRKHNC SVFGLLLTQKGNAT 180
 181 hdnicsgnsesitqcgldvtlceaeffrfavprkftpmwlsylvdnlpgrtkvnaesveri 240
 |||
 QY 181 HDNICSNGNSESTQCGIDVTLCEAEFFRAVPRTKFTPMWLSVLDNLPGRTKVNAESVERI 240
 241 krqhsqegtfqllkikwbnkqddivkklldlclensvqrhlganltfeglrslme 300
 |||
 Db 241 KRQHSQEQTFQLLIKWBQNKDQIVKKLIQDIDLCENSVQRHIGHANLTFEGLRSLME 300
 301 slpgkkyvgaedietkicakpsdqllkllswrlkngdqlkglmalhsktyhfpkt 360
 |||
 QY 301 SLPGKKYGAEDIETKIKACRPSDQILKLLSWRLKNGDQLKGLMALHKSXTYHFPKT 360
 361 vtqslkktirflhsftmyklyqklflemignvqsvkls 401
 |||
 QY 361 VTQSLKKTIRFLHSFTMYKLYQKLFLEMIGNVQSVKISCL 401
 RESULT 8
 ID R99948 standard; Protein: 393 AA.
 AC R99948;
 DT 23-APR-1997 (first entry)
 DE Mutated OCIF, OCIF-CBst.
 KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
 OS osteoporosis.
 FH Key Location/Qualifiers
 FT Peptide 1..21
 FT /note- "Signal peptide"
 FT Protein 22..393
 FT /note- "Mature OCIF-CBst"
 FT MISC_difference 392
 FT /label- Gln37Ileu
 FT MO9626217-A1.
 PN 29-AUG-1996.
 PD 20-FEB-1996; J00374.
 PR 20-FEB-1995; JP-054977.
 PR 21-JUL-1995; JP-207508.
 PA (SNOW) SNOW BRAND MILK PROD CO LTD.
 PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
 PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
 DR WPI: 96-402320/40.
 DR N-PDB: T33178.
 PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
 for bone resorption control, esp. treatment of osteoporosis
 PS Claim 80, Page 126-128, 183pp; Japanese.
 CC This sequence represents a mutated version of the full length
 CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This
 CC sequence represents OCIF-CBst in which Gln 371 is substituted by
 CC Ieu and amino acids 373-380 of the mature OCIF protein are deleted.
 CC These changes are caused by the introduction of a restriction site in
 CC the DNA encoding this protein. The OCIF of the invention has a
 CC molecular weight by SDS-PAGE of 60 kD under reducing conditions
 CC and 120 kD under non-reducing conditions. The protein is adsorbed onto
 CC cation-exchangers or heparin and its activity is lowered after 10 mins
 CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
 CC deg.C. OCIF is useful in the control of bone resorption and therefore
 CC in the treatment and prevention of disorders of bone resorption, e.g.
 CC osteoporosis.
 CC Sequence 393 AA:

Query Match 97.6%; Score 2957; DB 20; Length 393;
 Best Local Similarity 99.5%; Pied. No. 2.03e-288;
 Matches 391; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 Db 1 mnlldcalvldisikwtgetfppkylhydeetsbqllcdkcpptylkhqctakwt 60
 |||
 QY 1 MNKLDCALVFLDISIKWTGETFPPKYLHYDEETSHQLCDKCPGTYLKHQCTAKWT 60
 61 vcacpbdhytwsdshsdeslscspvckelqyvkgecnthrvceckegrylelefcik 120
 |||
 Db 61 VCAACPDHYTDSMHTSDECLYCSPVCKELQYVKGECNTRHNVCECKEGRYLEIFCCLK 120
 121 hrscppgfyvgaqtperntvckrcpdpffsnetsskacprkhncsvfgllltqkgnat 180
 |||
 QY 121 HRSCPFGVGAQTPERNTVCKRCPDGFFSNETS SKAPCKRKHNC SVFGLLLTQKGNAT 180
 181 hdnicsgnsesitqcgldvtlceaeffrfavprkftpmwlsylvdnlpgrtkvnaesveri 240
 |||
 Db 181 HDNICSNGNSESTQCGIDVTLCEAEFFRAVPRTKFTPMWLSVLDNLPGRTKVNAESVERI 240
 241 krqhsqegtfqllkikwbnkqddivkklldlclensvqrhlganltfeglrslme 300
 |||
 Db 241 KRQHSQEQTFQLLIKWBQNKDQIVKKLIQDIDLCENSVQRHIGHANLTFEGLRSLME 300
 301 slpgkkyvgaedietkicakpsdqllkllswrlkngdqlkglmalhsktyhfpkt 360
 |||
 QY 301 SLPGKKYGAEDIETKIKACRPSDQILKLLSWRLKNGDQLKGLMALHKSXTYHFPKT 360
 361 vtqslkktirflhsftmyklyqklflemignv 393
 |||
 Db 361 VTQSLKKTIRFLHSFTMYKLYQKLFLEMIGNOV 393
 RESULT 9
 ID R99924 standard; Protein: 380 AA.
 AC R99924;
 DT 22-APR-1997 (first entry)
 DE Mature osteoclastogenesis inhibitory factor.
 KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
 OS osteoporosis.
 FH Homo sapiens.
 FT MO9626217-A1.
 PN 29-AUG-1996.
 PD 20-FEB-1996; J00374.
 PR 20-FEB-1995; JP-054977.
 PR 21-JUL-1995; JP-207508.
 PA (SNOW) SNOW BRAND MILK PROD CO LTD.
 PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
 PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
 DR WPI: 96-402320/40.
 DR N-PDB: T36685.
 PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
 for bone resorption control, esp. treatment of osteoporosis
 PS Claim 6, Page 62-64, 183pp; Japanese.
 CC This sequence represents the mature osteoclastogenesis inhibitory
 CC factor (OCIF) of the invention. The OCIF has a molecular weight by
 CC SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-
 CC reducing conditions. The protein is adsorbed onto cation-exchangers
 CC or heparin and its activity is lowered after 10 mins at 70 deg.C or
 CC 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is
 CC useful in the control of bone resorption and therefore in the
 CC treatment and prevention of disorders of bone resorption, e.g.
 CC osteoporosis.
 CC Sequence 380 AA:
 Query Match 94.4%; Score 2861; DB 20; Length 380;
 Best Local Similarity 100.0%; Pied. No. 1.79e-278;
 Matches 380; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Db 1 etfppkylhydeetsbqllcdkcpptylkhqctakwtvcacpbdhytwsdshsdesl 60
 |||
 QY 22 ETFPKYLHYDEETSHQLCDKCPGTYLKHQCTAKWTVCACPDHYTDSMHTSDECL 81

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Db      61 yspvckelqyvgqecnrthnrvcceckegrylelefcikhriscppgfyvgvagtperntv 120
      |||
Qy      82 YCSVPCKELQYVKECNRRHNRVCCECKEGRYLEIEFCLHRSCPPGFVQAGTERNTV 141
Db      121 ckrpcpqqfifsnetskapcrkhnscvfg11ltqkgnatdnscnsesctqkcidv1 180
      |||
Qy      142 CKRCPQGFIFSNETSAPCRKHTNCSVFLLTLQKGNATHDNICNSNSITQKCGIDVTL 201
Db      181 cceaffrfvptkfrpnwlsvldnlpjgkvaesverikrghsagqetfg11k1wkhq 240
      |||
Qy      202 CCEAFRFVAPTKFTPNMLSVLVDNLPGTKVNAESVERIKRQHSQEQTFOLKLMKHQN 261
Db      241 kqgdv1k1k1gd1dicensvgrhghaantfegrlsmes1pgkxvgaed1ekt1ackp 300
      |||
Qy      262 KQODIVKTIIDIDICENSVRHGHANLTFEOLRSLMESLPCKVGAEDIKRT1KACP 321
Db      301 sdq1k1k1slw1kngdgt1k1gmh1kshsktyhfpkvtgsk1k1t1f1h1sf1m1k1y 360
      |||
Qy      322 SDOI1K1LS1M1R1K1NGDOD1TLK1GM1H1K1H1K1S1K1T1H1P1K1V1T1Q1S1K1T1 381
      |||
      361 qk1f1em1g1n1g1v1s1k1s1c1 380
      |||
Qy      382 OKLFEMIGNOVQSVKISCL 401
      |||

RESULT 10
ID      R99943 standard; Protein: 351 AA.
AC      R99943;
DE      23-APR-1997 (first entry)
KW      Mutated OCIF, OCIF-CC.
OS      Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
      osteoporosis.
FH      Key
FT      Peptide 1..21 Location/Qualifiers
FT      /note- "Signal peptide"
FT      Protein 22..351
FT      /note- "Mature OCIF-CC"
PN      WO9626217-A1.
PD      29-AUG-1996.
PR      20-FEB-1996; JP-054977.
PR      20-FEB-1995; JP-054977.
PR      21-JUL-1995; JP-207508.
PA      (SNOW) SNOW BRAND MILK PROD CO LTD.
PI      Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI      Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
PI      WPI: 96-402320/40.
DR      N-PSDB: T33173.
DE      DNA encoding osteoclastogenesis inhibitory factor protein - useful
      for bone resorption control, esp. treatment of osteoporosis
PS      Claim 65; Page 119-121; 183pp; Japanese.
CC      This sequence represents a mutated version of the full length
      osteoclastogenesis inhibitory factor (OCIF) of the invention. This
      sequence represents OCIF-CC in which amino acids 331-380 of the
      mature OCIF protein are deleted. The OCIF of the invention
      has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
      and 120 kD under non-reducing conditions. The protein is adsorbed onto
      cation-exchangers or heparin and its activity is lowered after 10 mins
      at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
      deg.C. OCIF is useful in the control of bone resorption and therefore
      in the treatment and prevention of disorders of bone resorption, e.g.
      osteoporosis.
SQ      Sequence 351 AA:

Query Match 87.3%; Score 2644; DB 20; Length 351;
Best Local Similarity 99.7%; Pred. No. 5,25e-256;
Matches 350; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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Qy      61 VCAPCPDHYITDWSHISDECLYCSPVCKELQYVKECNRRHNRVCCECKEGRYLEIEFCLK 120
Db      121 hrscppgfyvgvagtperntvckrcpddgfifsnetskapcrkhnscvfg11ltqkgnat 180
      |||
Qy      121 HRSCPPGVQVQAGTPERNITVCKRCPPGFFSNETSAPCRKHTNCSVFLLTLQKGNAT 180
Db      181 hdn1csgnsesctqkcgidv1lceeafrf1avp1k1f1p1w1s1v1d1n1lp1g1k1v1a1e1s1v1e1r1 240
      |||
Qy      181 HDNICSGNSESTQKCGIDVTLCEEAFFRFVAPTKFTPNMLSVLVDNLPGTKVNAESVERI 240
Db      241 krghsagqetfg11k1wkhqkdd1v1k1i1gd1dicensvgrhghaantfegrls1me 300
      |||
Qy      241 KRQHSQEQTFOLKLMKHQNODIVKTIIDIDICENSVRHGHANLTFEOLRSLME 300
Db      301 sl1pgk1k1v1ga1ed1ekt1k1ack1ps1d1k1l1k1s1w1k1ng1d1gt1k1gm1h1k1h1 351
      |||
Qy      301 SL1PGK1VGAED1EKT1K1ACK1PSD1ILK1LS1M1R1K1NGDOD1TLK1GM1H1K1H1 351
      |||

RESULT 11
ID      R99936 standard; Protein: 360 AA.
AC      R99936;
DE      23-APR-1997 (first entry)
KW      Mutated OCIF, OCIF-DCR1.
OS      Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
      osteoporosis.
FH      Key
FT      Peptide 1..21 Location/Qualifiers
FT      /note- "Signal peptide"
FT      Protein 22..360
FT      /note- "Mature OCIF-DCR1"
FT      MISC.difference 22..23
FT      /note- "Position of deletion, delta 2-42"
PN      WO9626217-A1.
PD      29-AUG-1996.
PR      20-FEB-1996; JP-054977.
PR      20-FEB-1995; JP-054977.
PR      21-JUL-1995; JP-207508.
PA      (SNOW) SNOW BRAND MILK PROD CO LTD.
PI      Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI      Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
PI      WPI: 96-402320/40.
DR      N-PSDB: T33166.
DE      DNA encoding osteoclastogenesis inhibitory factor protein - useful
      for bone resorption control, esp. treatment of osteoporosis
PS      Claim 44; Page 105-107; 183pp; Japanese.
CC      This sequence represents a mutated version of the full length
      osteoclastogenesis inhibitory factor (OCIF) of the invention. This
      sequence represents OCIF-DCR1 in which amino acids 2-42 of the
      mature OCIF protein are deleted. The OCIF of the invention
      has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
      and 120 kD under non-reducing conditions. The protein is adsorbed onto
      cation-exchangers or heparin and its activity is lowered after 10 mins
      at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
      deg.C. OCIF is useful in the control of bone resorption and therefore
      in the treatment and prevention of disorders of bone resorption, e.g.
      osteoporosis.
SQ      Sequence 360 AA:

Query Match 83.8%; Score 2539; DB 20; Length 360;
Best Local Similarity 98.3%; Pred. No. 3.84e-245;
Matches 341; Conservative 1; Mismatches 4; Indels 1; Gaps 1;

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Db      61 vcapcpdhyitdwshtsdeclycspvckelqyvgqecnrthnrvcceckegrylelefcik 120

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Qy      115 IEFCLKHRSCPPGFVQVQAGTPERNITVCKRCPPGFFSNETSAPCRKHTNCSVFLLTL 174

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| Db | 134 | qkgnatnhdnicsgnsestqkcgldvtlceeaaffrfavpklftfnuylsvldnlpstkva | 193 | | | |
|--|---|---|-----|--|--|--|
| Qy | 175 | QKGNATHDNICSGNSESTQKCGIDVTLCEEAFFRFVAPTKLFTFNULSVLDNLPSTKVA | 234 | | | |
| Db | 194 | esverikrghsqesqetfqljklwghpkkdgdvkkilqgdldleensvqghshantfeq | 253 | | | |
| Qy | 235 | ESVERIKRQHSQSQETQQLKLMKHQKDDYKAKIIOIDLCENSVQHGHANLTFEQ | 294 | | | |
| Db | 254 | lrsimesjprgkxvgaedlektlckxpsdqlkllslwrlngdgdltlglmhahkshxt | 313 | | | |
| Qy | 295 | LRSIMESJPRGKXVGAEDIEKTIKACKPSDQILKLILSLWRKNGDQDTLGLMHAKSHXT | 354 | | | |
| Db | 314 | yhfktvtgslkkrtrflhstfwtmlyqklflimjngvqsvlsl | 360 | | | |
| Qy | 355 | YHFKVTYQSLKKTIRFLHSFTWTKLYQKFLFIMJNGVQSVLSL | 401 | | | |
| RESULT 12 | | | | | | |
| R99949 standard: Protein: 321 AA. | | | | | | |
| R99949: 23-APR-1997 (first entry) | | | | | | |
| DE | Mutated OCIF, OCIF-CspH. | | | | | |
| KW | osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; | | | | | |
| KM | osteoporosis. | | | | | |
| OS | Synthetic. | | | | | |
| FS | Key | | | | | |
| FT | Location/Qualifiers | | | | | |
| FT | Peptide 1..21 | | | | | |
| FT | /note="Signal peptide" | | | | | |
| FT | Protein 22..321 | | | | | |
| FT | /note="Mature OCIF-CspH" | | | | | |
| PN | MO626217-A1. | | | | | |
| PD | 29-AUG-1996 | | | | | |
| PF | 20-FEB-1996: J00374. | | | | | |
| PR | 20-FEB-1995: JP-034977. | | | | | |
| PR | 21-JUL-1995: JP-207508. | | | | | |
| PA | (SNOW) SNOW BRAND MILK PROD CO LTD. | | | | | |
| PI | Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T; | | | | | |
| PI | Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H; | | | | | |
| PI | WPI: 96-402320/40. | | | | | |
| DR | N-PSDE: T33179. | | | | | |
| PT | DNA encoding osteoclastogenesis inhibitory factor protein - useful | | | | | |
| PT | for bone resorption control, esp. treatment of osteoporosis | | | | | |
| PS | Claim 83: Page 128-129; 183pp: Japanese. | | | | | |
| CC | This sequence represents a mutated version of the full length | | | | | |
| CC | osteoclastogenesis inhibitory factor (OCIF) of the invention. This | | | | | |
| CC | sequence represents OCIF-CspH in which amino acids 296-360 of the mature | | | | | |
| CC | OCIF protein are replaced by Ser-Leu-Asp. These changes are caused by | | | | | |
| CC | the introduction of a restriction site in the DNA encoding this protein. | | | | | |
| CC | The OCIF of the invention has a molecular weight by SDS-PAGE of 60 kD | | | | | |
| CC | under reducing conditions and 120 kD under non-reducing conditions. The | | | | | |
| CC | protein is adsorbed onto cation-exchangers or heparin and its activity is | | | | | |
| CC | lowered after 10 mins at 70 deg.C or 30 mins at 56 deg.C, and is lost | | | | | |
| CC | after 10 mins at 90 deg.C. OCIF is useful in the control of bone | | | | | |
| CC | resorption and therefore in the treatment and prevention of disorders | | | | | |
| CC | of bone resorption, e.g. osteoporosis. | | | | | |
| CC | Sequence 321 AA: | | | | | |
| Query Match 79.0% Score 2394: DB 20; Length 321; | | | | | | |
| Best Local Similarity 99.7%: Pred. No. 3,78e-230; | | | | | | |
| Matches 317; Conservative 1; Mismatches 0; Indels 0; Gaps 0; | | | | | | |
| Db | 1 | mmnlccalvldlslstwtqetfprkylhydeetsfnjldckpcpgtlykghctakwt | 60 | | | |
| Qy | 1 | MNKLCCALVLDLSIKWTQETFRPYLYHYDETSFNJLDCPCPGTLYKHCHCTAKMT | 60 | | | |
| Db | 61 | vcapcdpdytcdsvhtsdecllycspvckelqyvkgecntharvceckegrylelefcjk | 120 | | | |
| Qy | 61 | VCAPCDPDHYTCDSVHTSDECLLYCSPVCKELQYVKGECHTHARVCECKEGRYLEIFCJL | 120 | | | |
| Db | 121 | hrsccpgfygvvgaatperntvckrcpdpdgsfnetsakpcrkthncsvvgllltqkgnat | 180 | | | |
| Qy | 121 | HRSOCPGFGVVAQATPRNTVCKRCDPDGFNSNTSSAKPCRKTHNCSVFGLLLTQKGNAT | 180 | | | |

| | | | |
|-----------------------|--|---|----------------------|
| Db | 101 | hdmicsgmsesetgkcgivltlceeafrfayvptkftcpnwislvdnlpgtkvnaesver1 | 240 |
| Qy | 101 | HDNICSGSSESTOKCGIDIVLTCEEAFFRFAVPKFTPMWLSVLVDNIPGTVKNAESVERI | 240 |
| Db | 241 | krghsagcgtglljklwqhpkddvikkjldlscnsqgrhlghantfeqlrtime | 300 |
| Qy | 241 | KRSHSSQCGTITOLKLMKHQNKDDIVYKTIIDLDLSCNSVRHIGHANLTFEQLRIME | 300 |
| Db | 301 | slpgkkygaediektika | 318 |
| Qy | 301 | SLPGKKVGAEDIEKTIKA | 318 |
| RESULT 13 | | | |
| ID | R99938 | standard; Protein; 360 AA. | |
| AC | R99938: | | |
| DT | 23-APR-1997 | (first entry) | |
| DE | Mutated OCIF, OCIF-DCR3. | | |
| DE | Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; | | |
| KW | osteoporosis. | | |
| OS | Synthetic. | | |
| FM | Key | Location/Qualifiers | |
| FT | Peptide | 1..21 | |
| FT | /note="Signal peptide" | | |
| FT | Protein | 22..360 | |
| FT | /note="Mature OCIF-DCR3" | | |
| FT | Misc.diffidence | 105..106 | |
| FT | /note="Position of deletion, delta 85-122" | | |
| PN | WP0626217-A1. | | |
| PD | 29-AUG-1996. | | |
| PF | 20-FEB-1996; J00374. | | |
| PR | 20-FEB-1995; JP-054977. | | |
| PR | 21-JUL-1995; JP-207508. | | |
| PA | (SNOW) SNOW BRAND MILK PROD CO LTD. | | |
| PI | Goto,M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T; | | |
| PI | Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H; | | |
| DR | WPI; 96-402320/40. | | |
| DR | N-PSDB; 133168. | | |
| PT | DNA encoding osteoclastogenesis inhibitory factor protein - useful | | |
| PT | for bone resorption control, esp. treatment of osteoporosis | | |
| PS | Claim 50; Page 109-111; 183pp; Japanese. | | |
| CC | This sequence represents a mutated version of the full length | | |
| CC | osteoclastogenesis inhibitory factor (OCIF) of the invention. This | | |
| CC | sequence represents OCIF-DCR3 in which amino acids 85-122 of the | | |
| CC | mature OCIF protein are deleted. The OCIF of the invention | | |
| CC | has a molecular weight by SDS-PAGE of 60 kD under reducing conditions | | |
| CC | and 120 kD under non-reducing conditions. The protein is adsorbed onto | | |
| CC | cation-exchangers or heparin and its activity is lowered after 10 mins | | |
| CC | at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90 | | |
| CC | deg.C. OCIF is useful in the control of bone resorption and therefore | | |
| CC | in the treatment and prevention of disorders of bone resorption, e.g. | | |
| CC | osteoporosis. | | |
| CC | Sequence 360 AA; | | |
| Query Match | 75.3%; | Score 2282; | DB 20; Length 360; |
| Best Local Similarity | 90.2%; | Pred. No. 1.42e-218; | |
| Matches | 359; Conservative | 1; Mismatches | 0; Indels 38; Gaps 1 |
| Db | 1 | mmlllcalvfidisixwtgctfprkxlyhndeetsnqlldckppptylkqhtakwt | 60 |
| Qy | 1 | MNKLCCALVFLDISIXKWTGTETFPFKLHDEFTSHQLLDCDKCPGYLTKHCTAKWKT | 60 |
| Db | 61 | vcapcpdhyyrdsdshstdeclcysspvcckelgyvqgeonrthnrc----- | 105 |
| Qy | 61 | VCAPCPDHYRDSDSHTSECLCYSPVCKELGYVQECNRHNRRCCKEKGRTYIEFCLK | 120 |
| Db | 106 | -----fcpgdfifnesstskapcrkfhncsvfglllqgkgnat | 142 |
| Qy | 121 | HRSCPFGCVYQAGTPEKNYCKRCKCPDGFSENRSSKAPCRKHNCVSFGLLLTKGNAT | 180 |
| Db | 143 | hdmicsgmsesetgkcgivltlceeafrfayvptkftcpnwislvdnlpgtkvnaesver1 | 202 |
| Qy | 181 | HDNICSGSSESTOKCGIDIVLTCEEAFFRFAVPKFTPMWLSVLVDNIPGTVKNAESVERI | 240 |


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Db 203 krqhsagqetfqlklkwhqndqdvkklldlclensvgrhigahnlfeqlrsime 262
    |||
Qy 241 KROHSSQEQTFQLKLKWHQNDQDIYKRIIDIDLCENSVGRHIGAHNLFEQLRSIME 300
    |||
Db 263 slpgkkygaediektikacpsdqllklslwrkngdgtlkgldmhalkshktyhfekt 322
    |||
Qy 301 SLPGKKGAEIEKTIKACPSDQILKLISLMRIKNGDQDTLGLMHALKSHKTYHFEXT 360
    |||
Db 323 vtqslkktirflhsftmyklyqklflemignqvsvskl 360
    |||
Qy 361 VTQSLKKTIRFLHSFTMYKLYQKLFLEMIGNQVSVSKI 398
    |||

RESULT 14
ID R99937 standard; Protein; 359 AA.
AC R99937;
DE 23-APR-1997 (first entry)
DE Mutated OCIF, OCIF-DCR4
DE Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
    osteoporosis.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note- "Signal peptide"
FT Protein 22..359
FT /note- "Mature OCIF-DCR4"
FT MISC.difference 143..144
FT /note- "Position of deletion, delta 123-164"
PN W09626217-A1.
PD 29-AUG-1996.
PE 20-FEB-1996; J00374.
PR 20-FEB-1995; JP-054977.
PR 21-JUL-1995; JP-207508.
PA (SNOW ) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
PI WPI: 96-402320/40.
DR N-PSDB: T33169.
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
    for bone resorption control, esp. treatment of osteoporosis
PS Claim 53: Page 111-113; 183pp; Japanese.
PS This sequence represents a mutated version of the full length
    osteoclastogenesis inhibitory factor (OCIF) of the invention. This
    sequence represents OCIF-DCR4 in which amino acids 123-164 of the
    mature OCIF protein are deleted. The OCIF of the invention
    has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
    and 120 kD under non-reducing conditions. The protein is adsorbed onto
    cation-exchangers or heparin and its activity is lowered after 10 mins
    at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
    deg.C. OCIF is useful in the control of bone resorption and therefore
    in the treatment and prevention of disorders of bone resorption, e.g.
    osteoporosis.
CC Osteoporosis.
SQ Sequence 359 AA;

Query Match 74.0%; Score 2242; DB 20; Length 359;
Best Local Similarity 89.0%; Pred. No. 1,92e-214;
Matches 357; Conservative 1; Mismatches 1; Indels 42; Gaps 1;

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Qy 181 HDNICSNSESSTQKCGIDVTLCEAFAFRFAVPTKTPNMLSVLVDNLPGRYNAESVERI 240
    |||
Db 199 krqhsagqetfqlklkwhqndqdvkklldlclensvgrhigahnlfeqlrsime 258
    |||
Qy 241 KROHSSQEQTFQLKLKWHQNDQDIYKRIIDIDLCENSVGRHIGAHNLFEQLRSIME 300
    |||
Db 259 slpgkkygaediektikacpsdqllklslwrkngdgtlkgldmhalkshktyhfekt 318
    |||
Qy 301 SLPGKKGAEIEKTIKACPSDQILKLISLMRIKNGDQDTLGLMHALKSHKTYHFEXT 360
    |||
Db 319 vtqslkktirflhsftmyklyqklflemignqvsvskl 359
    |||
Qy 361 VTQSLKKTIRFLHSFTMYKLYQKLFLEMIGNQVSVKISCL 401
    |||

RESULT 15
ID R99937 standard; Protein; 359 AA.
AC R99937;
DE 23-APR-1997 (first entry)
DE Mutated OCIF, OCIF-DCR2.
DE Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
    osteoporosis.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note- "Signal peptide"
FT Protein 22..359
FT /note- "Mature OCIF-DCR2"
FT MISC.difference 63..64
FT /note- "Position of deletion, delta 43-84"
PN W09626217-A1.
PD 29-AUG-1996.
PE 20-FEB-1996; J00374.
PR 20-FEB-1995; JP-054977.
PR 21-JUL-1995; JP-207508.
PA (SNOW ) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
PI WPI: 96-402320/40.
DR N-PSDB: T33167.
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
    for bone resorption control, esp. treatment of osteoporosis
PS Claim 47: Page 107-109; 183pp; Japanese.
PS This sequence represents a mutated version of the full length
    osteoclastogenesis inhibitory factor (OCIF) of the invention. This
    sequence represents OCIF-DCR2 in which amino acids 43-84 of the
    mature OCIF protein are deleted. The OCIF of the invention
    has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
    and 120 kD under non-reducing conditions. The protein is adsorbed onto
    cation-exchangers or heparin and its activity is lowered after 10 mins
    at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
    deg.C. OCIF is useful in the control of bone resorption and therefore
    in the treatment and prevention of disorders of bone resorption, e.g.
    osteoporosis.
CC Osteoporosis.
SQ Sequence 359 AA;

Query Match 73.2%; Score 2218; DB 20; Length 359;
Best Local Similarity 89.4%; Pred. No. 5.77e-212;
Matches 312; Conservative 5; Mismatches 26; Indels 6; Gaps 6;

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OY 233 NAESEVERIKRQHSSEQTFQLKLMKHQNKDODIVKTIQDIDLCENSVQRHIGHANLTF 292
DB 251 eglrsimeslpgkxvgaediektlkacbpsdglkllslwrkngdqlkglmhalhs 310
OY 293 EQLRSIMESLPGKRVGAEDIEKTIKACKPSDQILKLLSLMRKNGDDOTLKGIMHALKHS 352
DB 311 ktyhfpkvtgslkktlrfhshftmyklyhklflemignvqsvklscl 359
OY 353 KTYHFPKVTGSLKKTIRFHSFTMYKLYOKLLEMIGNVQSVKLSCL 401

Search completed: Wed Aug 20 09:41:58 1997
Job time : 60 secs.